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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,414	02/17/2004	Won-kcun Yu	0100-P0017A	1308

66837 7590 04/01/2008

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EXAMINER	
NGUYEN, DONGHAI D	
ART UNIT	PAPER NUMBER
3729	
MAIL DATE	DELIVERY MODE
04/01/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/780,414	YU ET AL.	
	Examiner	Art Unit	
	DONGHAI D. NGUYEN	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,8-15 and 36-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,8-15 and 36-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 18, 2008 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-4, 8-15 and 36-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

"a display unit connected" (claims 1 and 41, line 8) is vague and indefinite because it is unclear as to what structure is the display unit connected to.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4 and 7-15 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,212,751 to Hattori in view of US Patent 6,434,264 to Asar.

Regarding claims 1 and 38, Hattori discloses an apparatus for positioning back-up pins on a support plate for supporting a circuit board thereon, the apparatus comprising: a back-up pin plate (200, see Fig. 9) having a substantially planar upper surface for positioning back-up pins (201) thereon; a back-up pin stand (236) for placing back-up pins therein; a camera (56, see Fig. 3) for taking surface images of the circuit board (24, See Col. 12, line 63 to Col. 13, line 5) to be supported by a plurality of back-up pins; a control unit (160) having a display unit (186) connected (see Fig. 6) for displaying the surface images of the circuit board taken by the camera (56 see Fig. 13 shows the back surface of PCB 24) and the control unit including a user interface (170) coupled to the an input device (172) for allowing a user to allocate a plurality of support locations (see Fig. 7 and Col. 10, lines 11-19) for supporting the circuit board (as shown in Fig. 1) with the back-up pins by selected, with the input device (172), support locations not interfering with parts (32) disposed on the circuit board (24) while viewing the images of the circuit board displayed on the display unit (186, see Fig. 13 and Col. 12, lines 17-37); and a transfer member (30) coupling with the control unit (160, see Col. 14, line 65 to Col. 15, line 7) for transferring a plurality of back-up pins (201) from the back-up pin stand to the previously-allocated non-interfering support locations on the back-up pin plate (See Fig. 9). Hattori is silent regarding the display a first image representative of a portion of the surface of the circuit board and a second image representative of substantially the entire surface of the circuit board at the same time. Asar teaches the display unit (240, see Fig. 9) that display the display a first image (bottom left) representative of a portion of the surface of the circuit board (52) and a second

image (top right) representative of substantially the entire surface of the circuit board for allowing user/operator rapidly inspect the surface of the circuit board (see Col. 6, lines 31-44). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Hattori by utilizing the display unit and display technique as taught by Asar for allowing user rapidly inspect the surface of the circuit board.

Regarding claim 2, Hattori discloses at least a portion of the back-up pin plate includes a magnetically material, and each of the back-up pins includes a magnetic portion for attaching onto the back-up pin plate by a magnetic force between the back-up pin plate and the back-up pin (see Col. 14, lines 19-20).

Regarding claim 3, Hattori discloses the camera (56) is a line charge-coupled device camera (see Fig. 6).

Regarding claim 4, Hattori discloses the first image is a real-time image taken by the camera and the second image is an image composed of a plurality of the real-time images taken by the camera (See Col. 13, lines 19-40).

Regarding claim 10, Hattori discloses the user interface (170) comprises an insert mode for allocation of the support location (Col. 10, lines 11-19 and Col. 16, lines 63-67).

Regarding claims 8-9, 11-12 and 39-40, Hattori does not disclose a mouse as input device of the control unit for entry and the user interface comprises a selection menu. Asar teaching control unit is a mouse (98) and user interface comprises selection menu (see Fig. 9) for inputting and selecting the desired views and operations of the circuit board. Therefore, it would have been an obvious to one having ordinary skill in the art at the time the invention was made to

modify the invention of Hattori by utilize the mouse and selection menu as taught by Asar for inputting and selecting the desired views and operations of the circuit board.

Regarding claim 13, Hattori discloses the user interface comprises a PCB loading mode for loading a circuit board onto the apparatus (See Fig. 1 and Col. 10, lines 19-29).

Regarding claim 14, Hattori discloses the back-up pin stand (236) comprises a plurality of openings (238) for receiving lower portions of the back-up pins (see Fig. 9).

Regarding claim 15, Hattori discloses the camera is coupled with the transfer member for moving together along a Cartesian coordinate (See Fig. 3 and Col. 11, lines 31-34).

Regarding claims 36 and 37, Hattori/Asar do not disclose the plurality of back-up pins having a general cylindrical shape with upper portion of the back-up pins having different diameter include about 8 mm and about 2 mm. It would have been an obvious matter of design choice to one having ordinary skill in the art at the time the invention was made to choose a different size and shape for the upper portion of the back-up pin. Since Applicants have not disclose the specific diameter i.e., about 8 and 2 mm of the upper portion of the back-up pins, would solve the stated problem or for any particular purpose and it appears that the invention would perform equally well with the back-up pins as disclosed by Hattori.

Regarding claim 41, Hattori discloses an apparatus for positioning back-up pins (201) on a support plate (200) for supporting a circuit board (24) thereon, the apparatus comprising: a back-up pin plate (200, see Fig. 9) having a substantially planar upper surface for positioning back-up pins (201) thereon; a back-up pin stand (236) for placing back-up pins therein; a camera

(56) for taking surface images of the circuit board (24) to be supported by a plurality of back-up pins; (see Col. 12, line 63 to Col. 13, line 6) a control unit (160) having a display unit (186) connected for displaying the surface images of the circuit board taken by the camera (see Fig. 13), the surface images including a first image depicting in real time of a portion of the surface of the circuit board where the camera is currently assigned (see Col. 12, lines 17-30), the control unit (160) including a user interface (170) coupled with an input device (172) for allowing a user to allocate a plurality of support locations (see Fig. 7 and Col. 10, lines 11-19) for supporting the circuit board (as shown in Fig. 1) with the back-up pins by selected, with the input device (172), support locations not interfering with parts (32) disposed on the circuit board (24) while viewing the images of the circuit board displayed on the display unit (186, see Fig. 13 and Col. 12, lines 17-37); and a transfer (30) member coupled with the control unit (160) for transferring a plurality of back-up pins (201) from the back-up pin stand (236) to the allocated support locations on the back-up pin plate (200); wherein the display unit (186) displays the first image at one side of the display unit; wherein the input device (172) includes a mouse or digitized input device (see Col. 10, lines 17-19) which allows the user to move a mouse pointer (cursor, inherent since it well known in display and computer art that the cursor on the display screen can be controlled by the keyboard) to a position on the image of the circuit board displayed on the display unit; wherein the control unit (16) further enables the camera (56) to move to a location for taking a real time image of a portion of the circuit board where the mouse pointer is located for subsequently selecting the support locations by clicking the mouse while viewing the real time image of the portion of the circuit board displayed on the display unit (see Col. 12, line 63 to Col. 13, line2). Hattori disclose the input device includes the digitized input device except a mouse as input

device and Hattori do not disclose displaying a first image representative of a portion of the surface of the circuit board and a second image representative of substantially the entire surface of the circuit board at the same time. Asar teaches the input device as the mouse and the display unit (240, see Fig. 9) that displays a first image (bottom left) representative of a portion of the surface of the circuit board (52) and a second image (top right) representative of substantially the entire surface of the circuit board for allowing user/operator rapidly inspect the surface of the circuit board (see Col. 6, lines 31-44) and input or select the desired views and operations of the circuit board as well as support locations of the back-up pins. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Hattori by utilizing the display unit and display technique and the mouse as the input device as taught by Asar for allowing user rapidly inspect the surface of the circuit board and for inputting or selecting the desired views and operations of the circuit board as well as support locations of the back-up pins.

Response to Arguments

6. Applicant's arguments filed February 18, 2008 have been fully considered but they are not persuasive for the reason below.

In response to Applicants' argument that Hattori/Asar do not disclose "the display unit for displaying the surface images of the circuit board taken by the camera, in which the surface images include a first image representative of a portion of the surface of the circuit board and a second image representative of substantially the entire surface of the circuit board and the input device for allowing a user to allocate a plurality of support locations for supporting the circuit

board with the back-up pins by selecting, with the input device, support locations not interfering with parts disposed on the circuit board while viewing the first image and the second image of the circuit board displayed on the display unit" (see "Remarks" bridged paragraph between page 7 and 8). It has been held that a recitation with respect to the manner in which claim apparatus (*i.e. display unit and the input device*) is intended to be employed or used *(i.e. displaying the surface images of the circuit board taken by the camera, in which the surface images include a first image representative of a portion of the surface of the circuit board and a second image representative of substantially the entire surface of the circuit board and allowing a user to allocate a plurality of support locations for supporting the circuit board with the back-up pins by selecting, with the input device, support locations not interfering with parts disposed on the circuit board while viewing the first image and the second image of the circuit board displayed on the display unit*) does not differentiate the claimed apparatus from the prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham,* 2 USPQ2d 1647 (1987).

Applicants argued that "Hattori does not discloses the transfer member to be coupled with the control unit for transferring a plurality of back-up pins from the back-up pin stand to the previously-allocated non-interference allocated support locations on the back-up pin plate" (see "Remarks" bridged paragraph between page 9 and page 10). The Examiner disagrees because the Hattori reference discloses the transfer member (30) which is coupled with the control unit (160) for transferring a plurality of back-up pins (201) from the back-up pin stand (236) to the previously-allocated non-interference allocated support locations (see Col. 12, lines 18-44, note that Hattori invention is to prevent the interference between the back-up pins and electronic

component mounted on the circuit board, see Col. 17, lines 27-33) on the back-up pin plate (200, See Fig. 9 and Col. 14, line 65 to Col. 15, line 7).

In response to applicant's argument that there is no suggestion/motivation to combine the references (see "Remarks" page 12, last paragraph to page 14, 1st paragraph), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Asar teaches the use and display of multiple images of the circuit board speed up the inspecting/judging process of the circuit board (see Asar discussion in Col. 3, lines 29-33) and an input device as a mouse for and inputting or selecting the desired views and operations of the circuit board as well as support locations of the back-up pins. Furthermore, applicant's arguments against the references individually (see "Remarks" pages 7-14), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONGHAI D. NGUYEN whose telephone number is (571)272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN
March 28, 2008

/Donghai D. Nguyen/
Primary Examiner, Art Unit 3729